

**Local Institutions in Common Property Resources:
A Study of Community-Based Watershed Management in
Northern Thailand**

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1. Introduction

The watersheds in Thailand are *de jure* governed by the state-property regime. Watershed management has been left entirely to government administration, mainly through the Royal Forestry Department (RED). This is because until recently these areas were extensively forested. However, under this governance the forest area has declined dramatically, from 53 percent of the country area in 1961, to 29 percent in 1986 (Abhabhirama *et al.*, 1988). Forests and watershed resources have *de facto* become an open-access resource which are susceptible to unlimited exploitation (Hirsch, 1990a; Feeny *et al.*, 1990; Ganjanapan, 1992).

Initiatives to privatize forest resources have so far failed to stop deforestation. Moreover, in many cases they may even have accelerated forest depletion. Furthermore, privatization often tends to concentrate wealth in the hands of the few, at the expense of equity (Tongpan *et al.*, 1990; Handley, 1991). In fact, private reforestation by means of a large-scale commercial forestry does not alleviate poverty since it fails to distribute benefits to the local people. Nor does it recognize traditional rights or any interest or capability in local communities to manage the forest resource around them (TDRI, 1990).

The watersheds in Northern Thailand, like many peripheral areas in developing countries, are at the "frontier" where a limited proportion of people have state-recognized tenure rights, and a large portion of forested and unforested land is usually designated as national reserved forest (Molna, 1990). Occupants of these areas include the settlers who often belong to the majority ethnic group (*Khon Muang*) whose actual land tenures tend to be the same as those recognized elsewhere in the country, the ethnic minority groups (*hilltribes*) who have a traditional land-use and informal tenure systems, and recent immigrants (could be both *Khon Muang* and *hilltribe*) on newly-cleared lands.

Local communities in Northern Thailand, being constrained by the rugged terrain and hilly landscape, have for a long time preserved community forests in the headwaters (*Ton Nam*) of watersheds to sustain water supply for the traditional irrigation systems or *Muang Fai* (Faichampa, 1990). The people of the North have usually set up cooperative organizations whose members use the water and cooperate in constructing, repairing, and managing the irrigation facilities. The rights and duties of the members of these organizations have been codified and clearly stipulated, and the punishment of offenders strictly enforced (Shigetomi, 1992).

The watershed forests, or *Paa Ton Nam*, are strictly protected by the community. In most cases, these forest areas are the headwaters from which the community draws the water supply. The watershed spirits, or *Phi Khun Nam*, are regarded as the guardians of the watershed forests. These beliefs provide an underlying morality for the management of watershed resources that are vital for the livelihood of the communities (Ganjanapan, 1992). The government and the local communities, however, do not seemingly share the same vision of watershed forests. That is, while local communities perceive nearby forests as theirs and as sources of cultivated land, food, water for irrigation system, and other necessities for their livelihood, the government perceives the watershed forests as state property to be conserved or appropriated for the interest of the entire nation (Faichampa, 1990). The government officials are usually sceptical of the local community's ability to manage the watershed forests.

As mentioned above, the state property regime has rarely proven successful in coping with watershed degradation problems because of the ineffectiveness of law enforcement (Tan-Kim-Yong *et al.*, 1988). Meanwhile the imposition of a private property regime on watershed resources is still open to question in terms of equity and sustainable livelihood concerns. Watershed resource management is in a dilemma. This paper aims to examine another potential alternative, that is,

community-based watershed management (CBWM) under local institutions existing in Northern Thailand (Wittayapak, 1994). It will explore the theoretical alternatives and practical solutions for common property resource problems in watershed management that go beyond the state and market orientation.

2. Geography of Northern Thailand

Northern Thailand is distinct from other parts of the country, especially in terms of its physiography, history, people, and culture. Northern Thailand consists of two topographic regions - the northern mountains and valleys, and the Upper Central Plain (see the map). It covers an area of 170,000 square kilometres or one-third of the country's land area. The northern ranges and valleys occupy the area above 18° N latitude. The five main parallel ranges running north-south and the valleys between them provide the catchment and headwaters of four major tributaries of the Chao Phraya River - the Ping, Wang, Yom, and Nan rivers that drain southward. This is the major water resource of Thailand, feeding the rice bowl of the Central Plain.

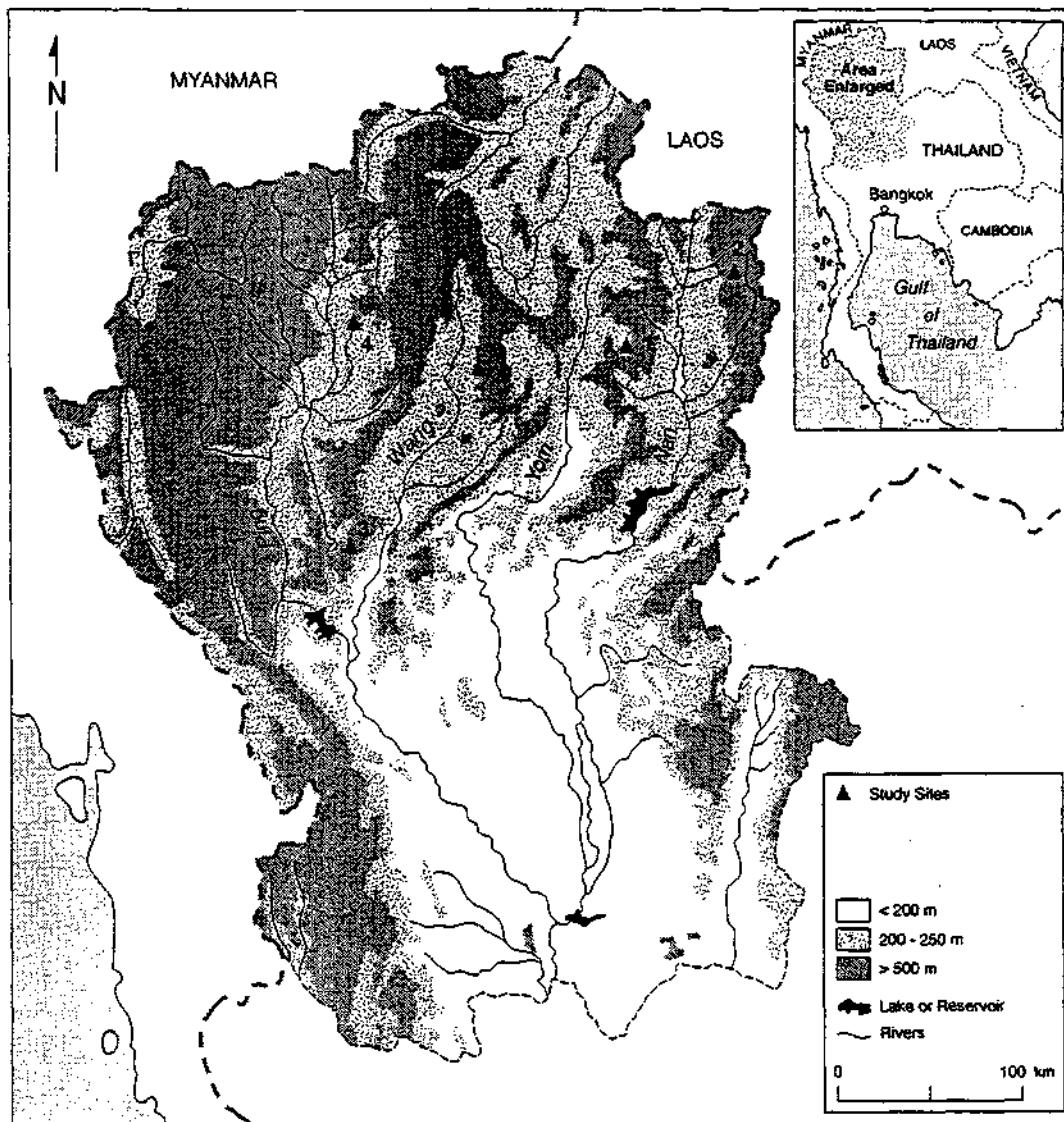
Between these ranges of the North are valleys and several intermontane plains at different altitudes from 150 metres to 380 metres above mean sea level (MSL) that provide agricultural land and area for settlements. The North may not have the heaviest rainfall in the country, but with its physical landform and healthy forest cover, the soil water is high and soil productivity is above average for the country (Arbhabhirama *et al.*, 1988). Northern Thailand is comprised of 17 provinces (*Changwat*). Geographical and socio-cultural characteristics divide Northern Thailand into the Upper North and the Lower North. The Upper North covers an area of 100,474 square kilometres, or 59 percent of the North. In geographical context, the Upper North as a distinct region can be divided into three distinctive geo-ecological, altitudinal, and cultural zones (Uhlig, 1980).

(1) The *lowland*, an area with slopes less than 5 percent and the elevation less than 300 metres MSL, is a zone of predominantly sedentary wet-rice cultures with a relatively well developed infrastructure in the valley and intra-montane basins. It covers 9 percent of the total area of the Upper North.

(2) The *upland*, an area with the slopes from 5 to 35 percent and elevation from 300 to 600 metres MSL, is a zone of mixture of land rotation and permanent agriculture, occupied by hilltribes as well as *Khon Muang*. It covers 30 percent of the total area of the Upper North.

(3) The *highland*, an area with slopes more than 35 percent and elevation more than 600 metres MSL, is a zone of shifting cultivation by hilltribes. It covers 61 percent of the total area of the Upper North.

The Lower North covers an area of 69,532 square kilometres, or 41 percent of the North. Most of this area is flood plain, with socio-economic and cultural characteristics similar to those of the Central Region. The population in the North was about 11.0 million or 19.6 percent of the national population. The Upper North has a population of 5.6 million, constituting 50.8 percent of the total population of the North. Culturally and historically, the people who are considered truly "northerner" or *Khon Muang* are only people of *Lanna* (8 provinces of the Upper North). The Northern Thai or *Khon Muang* dominate the population of the Upper North. They call themselves *Khon Muang*, which literally means "town people" in order to differentiate themselves from the Central Thai (*Khon Thai*) as well as from the *Khon Doi* or "hilltribes". They form about 80 percent of the total population. They speak a distinctive northern dialect or *Kham Muang*, which is slightly different from Central Thai language.



Map of Northern Thailand

3. Analytical Framework

In terms of property-right regimes, a resource management regime is a structure of rights and duties characterizing the relationship of individuals to the particular resource and to one another regarding that resource (Bromley and Cernea, 1989). The institutional arrangements are established to define the property regime over the natural resources, whether that resource regime would be classified as private property, state property, or common property. These institutional arrangements define property relations between one individual vis-a-vis others both within and outside the group by stating that one party has an interest in the particular resource that is protected by a **right** only when all others have a **duty** to respect that specified right (Bromley, 1991, emphasis in original). When one has a **right** to the particular resource one has the expectation in both the law and in practice that their claims will be respected by those with **duty**, or protected by the state. Rights can only exist when there is a social mechanism that gives duties and binds individuals to those duties. Thus, "property" refers to a bundle of rights relating to the use and transfer of natural resources (Ciriacy-Wantrup and Bishop, 1975).

Stevenson (1991: p.46) gives a synoptic definition of common property as "a form of resource management in which a well-delineated group of competing users participates in extraction or use of a jointly held, fugitive resource according to explicitly or implicitly understood rules about who may take how much of the resource¹". The management groups may vary in nature, size, and institutional structure, but they are social units with clearly-defined membership and boundaries, with certain common interests, with continual interactions among members, with some common norms, and often with their own endogenous authority systems (Bromley and Cernea, 1989).

It is crucial to understand common property as a resource regime defined by group ownership in which the behaviours of all members of the group are subject to be regulated by accepted rules and open for all to monitor each other. A viable common property regime thus has a built-in structure of both economic and non-economic incentives that encourage compliance with the conventions and institutions. In a community setting in which individual conformity to social norms is the dominant ethic, common property regimes provide a cultural context compatible with, and in fact vital for, effective performance of local institutions.

The inducement of a private property regime, following changes in resource endowment, technology, and property relations in developing countries, often creates conflict with prevailing socio-cultural values (Ruttan and Hayami, 1983). Regarding the nature of the resource and the socio-cultural characteristics of its users, it may sometimes be more appropriate to restore a common property regime than to attempt to induce privatization. The inducement of a state property regime to solve the resource degradation problem has been widely accepted since the post-colonial era. Particularly, in the last two decades many local resources have been nationalized through central regulatory policies, new legal frameworks, and direct administration (Blaikie and Brookfield, 1987). However, some analysts come to the conclusion that this shift in the locus of control has not resulted in more effective natural resource management (Korten, 1986). It has, instead, simply weakened local common property regimes (Gibbs, 1986). As a result, Bromley (1991: p. 10) observed, "to set the people against natural resources only invites cynicism and lawlessness, and does little to protect natural resources".

In Thailand, population growth and the scarcity of resources have led the government to tighten their control over forest reserves, and to introduce a system that would control land use, determine ownership, and generate revenue from land through strengthening the legal framework for private land ownership (Feeny, 1982; World Bank, 1984; Feeny, 1988a). Although the security of land ownership is important, and its impacts have been studied recently in the case of Thailand

(Feder *et al.*, 1988), neither privatization nor state intervention is sufficient to solve the problems of natural resource degradation. Moreover, it appears that the national legislation concerning natural resources in Thailand, until recently, aimed to control territory and generate revenue for the government rather than to conserve the resources (Feeny, 1988b).

3.1 An Institutional Approach

"Institutions", in general, are collective conventions and rules that establish acceptable standards for individual and group behavior, reducing individual uncertainty concerning the actions of others (Bromley, 1982). Institutions can be complexes of norms and patterns of behavior that persist over time by serving collectively valued purposes (Uphoff, 1986). Institutional arrangements, in the context of resource management, are defined as "the rules and conventions which societies establish to define their members' relationships to resources, translate interests in resources into claims, and claims into property rights" (Gibbs and Bromley, 1989: p.22).

Institutions embody some kind of "collective action" in which the interests, resources, preferences, ideologies of many persons are brought together, and are reinforced by diffused benefits, legitimation, shared expectations, and rules (Bromley, 1982). There can also be penalties imposed for persons who violate institutional obligations (Arkadie, 1989). Operationally, "institutions", according to Ostrom (1990: p. 51), can be the set of working rules that:

determine who is eligible to make decisions in some arena, what actions are allowed or constrained, what aggregation rules will be used, what procedures must be followed, what information must or must not be provided, and what payoffs will be assigned to individuals dependent on their actions.

All rules essentially contain prescriptions that forbid, permit, or require some action or outcome (Ostrom, 1986). Institutions somehow help define organizations through laws and administrative decisions, which establish principles and guidelines for their formation and conduct. Operational rules and procedures eventually become "institutionalized" after having served the needs and normative expectations of people over time (Uphoff, 1986). Organizations vary in their degree of institutionalization.

The terms *institution* and *organization* are often used synonymously. Three forms are usually recognized (Uphoff, 1986): organizations that are not institutions; institutions that are not organizations; and organizations that are also institutions or *vice versa*. Institutions in this paper embraces all these combinations. In particular, *institutional arrangements* are defined as "property rights in watershed resources and the rights and obligations of individuals and groups"; and *organizational arrangements* are "the ordered groups of people who use watershed resources purposefully" (Gibbs, 1986: p.91). Organizations, as the structures of recognized and accepted roles, may exist in a formal or informal form. The latter has no legal basis to prescribe explicitly the roles and the authority and other resources associated with it.

When co-users are dependent on a given local common property resource (CPR) as a source of economic activity as well as their livelihood security, they are jointly affected by almost everything they do. Each individual must take into account the choices of others when assessing his/her personal choices. These co-users are tied together in a web of interdependence so long as they continue to share a certain CPR. The problem facing CPR users is how to change the situation from one in which individuals act independently to one in which they adopt coordinated strategies to obtain higher mutual benefits or reduce their joint harm. This, however, is not necessarily to create an organization. Organizing is a process; an organization is the result of that process

(Ostrom, 1990). The major tasks of organization involve changes that order activities so that sequential, contingent, and frequency-dependent decisions are introduced where simultaneous, noncontingent, and frequency-independent actions had prevailed in the use of a CPR (see diagram below).



Almost all organization is accomplished by setting a priority of activities that must be carried out in a particular order. This results in the contingent strategies which individuals can use in making decision to cooperate. They are willing to give up immediate returns in order to gain larger joint benefits when they observe others following the same strategy.

To conduct an institutional analysis of CPR, Ostrom (1990) suggests analysts examine the following contexts. First, it is necessary to understand the physical structures of the resource such as its size, clarity of boundary, and other related attributes including the scarcity of the resource. Given the socio-economic circumstances of the resource users, how dependent are they on the resource, and what are the risks involved in various potential types of resource uses? Further questions must be asked about the key attributes of the individuals - how many are involved; are they involved in multiple activities together; are their interests roughly convergent or heterogeneous; have they established prior norms of behavior that can be used (or pose a disadvantage) in trying to solve CPR problems? Finally, the rules that resource users have devised, how they function, and how these affect the incentives of the participants must be examined.

3.2 Institutions and Peasant Collective Action

Many economic interactions in peasant society are non-market transactions involving cooperative activities. Thus to address such issue, two theories pertaining to collective action in peasantry - James Scott's moral economy approach (1976) and Samuel Popkin's political economy approach (1979) - will be discussed briefly (more details in Brocheux, 1983; Feeny, 1983; and Keyes, 1983 a). Both are based on empirical evidence from Southeast Asia. On many occasions, both Scott and Popkin refer to Thai peasant society from the studies of Embree (1950), Moerman (1968), and Potter (1976). Scott (1976) uses evidence from Myanmar and Vietnam in portraying a collective behavior of the peasant, founded on the *norm of reciprocity* and *the right to subsistence*, risk-aversion (safety-first) strategies, and patron-client relationships. In contrast, Popkin (1979), focusing on individual decision making, argues that peasants may make risky investments (gambling), and also consider long-term as well as short-term investment logic.

The "moral economy" approach focuses on the relations between economic activity and social institutions. The moral economist argues that pre-capitalism peasantry does not have individual possession assumed to be created by capitalism when peasants are forced into market relations by the destruction of their pre-capitalism institutions. In the moral economy approach, markets are assumed to be a last resort for the peasants. The village is the key institution that provides them with livelihood security assured by the "right to subsistence" in their village community.

By and large, the image of the peasant village community in developing countries remains one of a system of inter-connected and complementary relationships. A closely-woven group of people interact intensively with one another in all significant areas of life. This in turn creates and

reinforces significant social boundaries, setting members apart from outside groups and from the higher level institutions of the wider society - the state. In contrast to villages in Central Thailand, the village community in Northern Thailand, apart from its definite geographical unit, seems to fit in this description in terms of the existence of cooperative activities and evidence of group formation (Potter, 1976; Shigetomi, 1992).

The infringement of the peasant's institutions by the state and the capitalist creates the tensions which then lead to peasant involvement in rebellion and revolution (Scott, 1976). The corporate village is responsible for the ownership and management of the communal resources. Nonmarket systems, based on ethics of reciprocity and patron-client relationship, are presumed to be more benevolent, humane, and reliable than market systems. Village redistributive mechanisms help reduce the pressure from the scarcity of resources, and reciprocal labor exchange helps relieve the labor shortage.

Scott (1976) points out that creation of the nation state and commercialization undermine peasant welfare, since they cause inequity and stratification and force the peasants into isolated individualism without the assurance and protection from their traditional institutions. Subsistence ethic, customary rights, and reciprocity are replaced with contracts, the market, and uniform regulations.

Popkin (1979; 1986), in his political economy approach, argues that the moral economy approach does not provide the procedures by which the norms governing behavior in the villages are derived, how conflicts among the norms are adjudicated, or how a subsistence level is decided. There is no consideration of conflicts between public and private means of assuring survival for peasants and no consideration of free-rider problems in the functioning of village institutions. In short, Popkin's political economy approach opposes to every thesis made by Scott's moral economy approach.

Popkin (1986) argues that village resources and institutions are treated by peasants as collective goods, and that peasants apply the investment logic to villages in the same way as they apply to the markets. The uncertainties of long-term dependence upon village institutions leads to a preference for private long-term investment and short run maximization behavior about village resources. Village norms are flexible regarding changes in the relative power of groups and individuals and are affected by strategic interactions within the village, particularly the free-rider problems. Favouritism and personal profit may influence the decision of the leaders to appropriate the resources for themselves.

However, Popkin (1981) maintains that peasants seek to achieve maximum livelihood security, not maximum profit, in their economic behavior. His political economy approach later seems to straddle both the role of institutions and the economic rationality of individualism. Popkin denies that rationality is merely self-interest (interest only in one's own welfare). He states that, in different times, peasants care about themselves, their families, their friends, and their villages.

The two approaches are founded on different basic assumptions about peasant behavior regarding economic activity, especially in response to the scarcity of communal resources and changes in the village influenced by outside forces (Hirsch, 1990b). Both yield useful insight for understanding the peasant behavior in changing society. In the context of collective action in Thai peasant society, studies in the villages of Northern Thailand by Moerman (1968) in Ban Ping and Potter (1976) in Saraphi were set against the "loose-structure" model of Thai society proposed by Embree² (1950) which influenced the interpretation of Thai peasant society for several decades.

According to Embree (1950: p. 182), a "loosely-structured" social system means that the Thai, in contrast to the Japanese, allow considerable flexibility in individual behavior, place less importance upon observing reciprocal rights and duties, have "the almost determined lack of regularity, discipline, and regimentation." Unlike the Chinese, the Thai have no clear-cut system of

duty and obligation in family relations. Embree states that Thai villagers, in contrast to those of Japan, have rights and duties that are less clearly defined, labor exchange systems that are "less closely woven", and village relationships do not emphasize long-term obligations (Embree, 1950 in Potter, 1976: p. 1). In contrast to the westerners, the Thai have no respect for the laws and no sense of time. Both Moerman (1968) and Potter (1976) reject the loosely-structured paradigm and consider it unfitted to the Northern Thai peasants' behavior.

4. Socio-Economic and Cultural Contexts

In the peasant communities of Northern Thailand, the individual unit of decision-making tends to be at the household rather than personal level. Therefore, any decision making in CBWM that requires an individual vote, contribution, or allocation is mostly based on the household unit not the number of persons in the household. This can be seen in village meetings and cooperative activities such as repairing weirs, digging canal, and monitoring the watershed forest, which are usually counted by household unit. In common property terms, these households are theoretically entitled to the resources of the community watersheds.

According to previous studies (e.g. The National Research Council, U.S.A., 1986; Wade, 1988; Ostrom, 1990), a small number of users was likely to form and maintain the collective action organization in managing the common property resources. Feeny (1992: p.272) states that "if a group is smaller, all other things being equal, it should be less costly for members of the group to recognize each other and so easier for the group to detect rule infractions by group members and entry into the commons by nongroup users." In addition, the cost of decision making and coordination of activities could similarly be related to group size. Olson (1965), though pessimistic about collective action, made an exception for the small group. However, none of these scholars indicate exactly the number of users in the small group. The small group was rather qualitatively defined in terms of noticeability among members within the group (Wade, 1988).

The large number of users combined with the large area of watershed forest makes it difficult to reach consensus in decision making. Enforcement of rules, coordinating, and monitoring is less effective and more costly because there are so many users. Sometimes it is difficult to tell who is an eligible user and who is an outsider. Besides the simple logic regarding the number of users is that the larger the number of users the smaller the shares in the watershed resources. It means that a large group of users compete to assert their rights on a limited resource. In such a situation the community needs effective rules to control the rate of use in order to ensure the sustained yield of watershed resources and guarantee equal shares among the members of community.

For the communities with small numbers of users their decision-making arrangements are simple because every member knows each other. The villagers are able to observe the behavior of their fellow villagers. In the peasant community of Northern Thailand, the village may contain less than 100 up to 300 households. However, the important essence of the village is not at the number of the household itself but rather the relationships among the villagers in the territorial and social organization unit that affects the decision-making arrangements in the use of the watershed. In this sense, the village community is a discrete entity of corresponding physical and social boundaries (Hirsch, 1991). Therefore, in addition to the direct effects on subtraction and exclusion in the use of the commons, a large number of users affect the complexity of decision-making arrangements and collective action. The small size of user group in the community-based watershed management is significant in terms of enabling members of the community to notice and monitor the behavior of each other.

Land use in northern Thai village can be classified into three major types of agriculture which are closely related to the dependency on watershed resources: sedentary wet-rice field, dryland cropping, and orchard. Sedentary rice cultivation is not only the livelihood for people in the lowland valleys of the North; it is a culture. Wet-rice cultivation requires much water and needs an organized system for water allocation, distribution, and maintenance. The traditional irrigation system (widely-known as the *MucmgFai*³ system) has been both technologically and institutionally developed for centuries in the Upper North. Every year before the rainy season starts, weirs (*Fai* in Thai) are repaired and canals (*Muang* in Thai) are dredged in preparation for the growing season. These jobs are organized by the *Muang Fai* groups or water user groups. In the past, weirs were made of wood and bamboo which were easily destroyed during peak season overflows. Nowadays, most weirs are constructed of concrete which lasts longer. Thus *the Muang Fai* groups in modern times tend to deal mainly with water allocation and management rather than repairs.

The small size of suitable lowland forces the peasants to practice intensive cultivation (multiple cropping) where water is available. Many must also cultivate less arable land which in turn requires a cooperative system of water maintenance due to the uneven slope of the land and limited water sources during off-season. Traditional rice cultivation is largely dependent on nature. Manure from cows and buffalos is used in the fields that yielded low productivity in the past year. The use of chemical fertilizer, however, has been increasing. Farmers tend to invest in chemical fertilizer in areas that are well irrigated rather than those at risk through drought or flood. Improvement of rice yield is important for these farmers to relieve the pressure of meeting their household consumption rather than to generate cash income. The improvement of soil fertility can be undertaken on an individual basis by investing more fertilizer but assurance of sufficient water for rice fields needs collective action in maintaining the flow of water from the headwaters. This leads to the formation of community-based watershed management.

The limited area of lowland in the watershed valleys forces some peasants to turn to rainfed cultivation in the less fertile uplands. This has resulted in widespread encroachment of forest land in the North. Cultivation on the uplands, and highlands to a lesser extent, has become an alternative for villagers who: have no paddy fields in the more fertile lowland valley; have not enough paddy field to produce rice to feed the family; or want extra income from cash crops. This system of swidden agriculture practised by the lowlanders (*Khon Muang*) is known as a "partial" system which could be either supplementary or incipient swidden farming according to Conklin's⁴ (1957) classification of swidden systems (also see Chapman, 1978; Van Der Meer, 1981). In the past, villagers acquired their cultivated upland from the forest lands by slash-and-bum practices, not yet regulated by community rules, but rather treated as open-access (Efirsch, 1990a). At present, further encroachment in watershed forests is prohibited by the community rules.

Despite its less attractive economic returns, upland cultivation still offers a safety valve for land pressure in the lowland valley in many peripheral areas of the Upper North. Moreover, for people who have no alternative local employment, upland cultivation bears low opportunity cost of labor for them. It is smoothly integrated with wet-rice cultivation in terms of timing of labor requirements. Besides, dryland rice is ready for harvesting at the time when most farmers are just about to run out of rice for consumption (Chapman, 1978).

It is obvious that the shortage of suitable lowland forces some farmers to cultivate on less arable upland for their living. Over time, increasing numbers of farmers and rate of resource use in the uplands have destabilized the watershed system through upland-lowland interrelationship in both the biophysical and socio-economic aspects. Sedentary wet-rice cultivation has suffered most from the watershed degradation since its water supply depends on a healthy upper watershed. Throughout the historical development of CBWM in these communities, it appears that the rice farmers have been the prime movers in formulating institutional arrangements for watershed

protection. The rice farmers who are the majority of the community override the smaller number of reluctant shifting cultivators in the initiative to impose rules on the use of the watershed resources, and subdue the resistance from a small group of vested interests such as illegal loggers and timber traders.

Limited land holdings and the scarcity of watershed resources also force the villagers to seek second jobs to fill the gap between their actual income from their main occupation and the rising costs of living. The tendency of young men and women to seek jobs in the city has grown in recent years. These second jobs in wage labor, sometimes providing more income than the main occupation, have recently functioned as a safety valve for the pressure on land and watershed resources. In the past, the villagers considered the watershed forest as their source of necessities and income after the harvesting season ended. They headed to the forest for everything that they could make money from, ranging from timber, fuelwood, charcoal, vegetables, hunting, and a variety of minor forest products. Nowadays, young labor heads to the city instead.

The livelihood of the local communities is dependent on the watershed resources in several types of resource use ranging from timber, fuelwood, source of water, cultivated land, and minor forest products. The minor forest products in these northern villages include mushrooms, vegetables, bamboo shoots, herbal plants, fruits, rattan, thatch, and honey. All communities consider the source of water in the watershed as the most important resource sector, indispensable for the livelihood of members of the communities. They will sacrifice other resources such as timber and upland cultivation just to preserve the headwaters. The dependency of the villagers on the source of water from the watershed forest, on the one hand, dictates the viability of local institutions in the CBWM. The high degree of dependency on watershed for other resource sectors, on the other hand, can possibly be an imminent pressure on the vulnerable institutional arrangements unless alternatives are available as safety valves. Faichampa (1990) suggested three scenarios of dependency on watershed forest: i.e., excessive dependence; optimal level of dependence; and inadequate dependence. In scenario 2, CBWM system is likely to be sustainable.

Demands for certain types of watershed resources from outside the community can be a temptation to exploit that resource at a rate exceeding the capability to sustain yields. The high prices of certain watershed resources, such as timber and some minor forest products, may induce opportunism within the community as well. For example, the demands for the bark of some species of tree in the Mae Khan basin, in Samoeng, Chiang Mai, have caused the over-exploitation and destruction of the trees (Tan-Kim-Yong *et al.*, 1988). The 1989 logging ban by the government, on the one hand, might have helped strengthen the local institutions to be more legitimate regarding the protected watershed forest. On the other hand, it also causes rising demands for timber and other wood products which in turn may make rule breaking worth the risk. Market mechanisms are the external arrangements (Oakerson, 1992), which are beyond the control of local institutions in the village community. Demands for resources in the market can be measured by prices or costs incurred. However, for the local community, the need for watershed resources for their livelihood security, especially water resources, cannot be compromised with the short-term benefits from extracting resources for the market. As long as the needs of watershed resources for livelihood security in the local communities overshadow the demands of watershed resources in the market, community-based watershed management is likely to be maintained.

The fact that watersheds are comprised of several resource sectors may create conflicts between resource uses. However, resource use conflicts in CBWM have been minimized through trade-offs between conflicting needs resulting in prioritizing resource use in each community. Although water sources are always the first priority in these communities, the other types of resource use may be relaxed according to the physical conditions of the watersheds. This reflects in the variation of rules governing the appropriation of watershed resources among the communities.

Leadership skill of the community leader is perhaps more important for CBWM than for any other local community development activities since the leaders have become both the decision makers and the enforcers of the rules. The historical development of the existing CBWM institutions owed their emergence largely to charismatic leaders with a strong commitment to protecting the community watershed. Many CBWMs were initiated by the leaders of the *Muang Fai* groups which are literally known as *Khae Muang* or *Khae Fai*. These *de facto* leaders, or the "elders" (Keyes, 1970), are well respected by the rice farmers whose livelihood depends on the water from the watersheds. When the watershed forests were threatened by commercial logging these leaders led the villagers to revolt against the influential entrepreneurs and the authorities. Meanwhile the formal leaders, sub-district head (*Khamnan*) and village headman (*Phuyaiban*), tended to lean more toward the position of outside influential people because of their vested interests and official duties. These *de facto* leaders still have influence among the villagers, especially the rice farmers, even though they are not in a formal position within the local power structure. In fact, their influence is not limited by administrative jurisdiction as those of the *Khamnan* and *Phuyaiban* but rather by watershed boundaries. They are ready to take action if the formal leaders fail to protect the watershed forest.

At present, it is not uncommon for the local leaders, either sub-district head or village headman, to belong to the upper socio-economic stratum of the village. In some communities, these leaders have entrenched their interests in logging and timber trading. This makes any initiative in forming CBWM impossible. The long enduring and well established CBWM institutions tend to exist where there are records of honest and charismatic leadership. Traditionally, the leaders are supposed to be the representatives of the local community in dealing with state authorities and other external arrangements, or known as "synaptic leader" (Moerman, 1969; Keyes, 1970). However, when the village economy and polity become more dependent on external forces, the role of local leaders as representatives of the community is diminished since their interests depend on external resources. They become agents of the state, and in many cases, the capital owners within the community (Hart, 1989; Hirsch, 1990b). Local organizations such as the Tambon (sub-district) Council and Village Committee have become functionaries of the state and, in some cases, of the market as well. This is one reason why not every community is capable of forming CBWM institutions, and why some CBWMs have failed to keep their local institutions in effect.

5. Institutional Arrangements

Operational rules are usually devised by the local community to regulate the use of watershed resources held as commons in a specific community. These rules vary from one community to another depending on the physical constraints in the given watersheds and the socio-economic and cultural contexts of user communities discussed previously. These rules may, or may not, coincide with national legislation and administrative regulations issued by the government, and in some cases, may even be sharply contradictory to the law. The intention of the rules and convention in many communities were initially to prevent logging concessions. As observed during fieldwork, cutting trees for building houses in many villages is not restricted except in the protected headwaters and areas close to the stream channels. This is partly because the villagers in these communities believe that the watershed forests are plentiful enough for domestic use within their communities.

The operational rules of CBWM in some communities have become institutionalized into the routine activities in the community. The regularity of rule enforcement and leadership skills have contributed to the establishment of this local institution. In some cases, the monitoring of user behavior is through the "Forest Patrol Committee" similar to the patrol detectives in the common

land of Japan (McKean, 1992). The village communities with CBWM, like many rural communities in the North, have created "village laws" to maintain peace and order within the community. This kind of law, locally known as *Kocbnai Muban* (similar to *Kodmai Paa* in Hirsch, 1990b), has helped settle a variety of minor conflicts at the village level. The coverage of village laws includes internal affairs of the household, firearm violation, vandalism, theft, dispute, nuisance, free riding. Rules governing the use of watershed resources are usually added into the existing village law. The village law is normally written on a big board and posted at the *Sola* or village hall where everyone can see it. In fact, the village law is common knowledge, based on the consensus of members of the community. In remote areas outside the reach of the national law, village laws have been effective mechanisms in social control for a long time. Local villagers are used to this kind of law and the village laws become the norms or folklore of the community. In a self-contained village community, social sanctions are effective punishment because the villagers are aware of maintaining dyadic relationships between each other.

In some cases, the operational rules for the watershed forest are based on the tradition that has continued for generations. These rules have become common knowledge and constitute common laws. Every household knows the rules and traditional practices concerning the watershed forest, despite no written documentation. Relationships among the villagers in these communities are interwoven by a kinship network because they have expanded their communities from the same families since the beginning of settlement. Norms and traditions are important mechanisms in social control including the control of pattern of use of the local watershed forest. It is also found in many communities in the North of Thailand that sacred groves have been maintained in association with a belief in a watershed spirit for centuries (Ganjanapan, 1992).

To make the operational rules be effective, each community needs some kind of organizational arrangements to administer and enforce the rules, including the people involved in the process of decision-making. Decision makers are defined here as persons who are involved in rule making, rule enforcement, and making any decision on behalf of the members of the community concerning CBWM. The process of decision making and the number of decision makers may be different from one community to another depending upon the operational rules. It is true that problems arise where a uniform set of rules is applied to a large common-pool resource regardless of its specific circumstances (Shui Yan Tang, 1991). In some cases, multiple layers of organizations may be needed to manage a watershed of considerable size.

Originally, organizational arrangements in most of CBWMs functioned effectively through the network of the water user groups. The water user groups were arranged across the administrative boundaries (sub-districts and villages) by using the watershed boundaries. The institutional arrangements of the water user group (*Mucmg Fai*) were well developed before CBWM was initiated. All communities tend to use organizations that already exist in the local community to be the decision making bodies for CBWM instead of creating new organizations. Although most CBWM institutions were initiated by a water user group, their activities have later been shifted to the local administrations such as the Tambon (sub-district) Council and Village Committee. The reason that they make use of the existing local administration to undertake the CBWMs is because they will be able to gain recognition from the government and may benefit from government rural development programs such as the Tambon Council development budget. Besides, in Thai bureaucratic polity, an organization that is distant from the state apparatus tends to be viewed with suspicion by the government officials as a threat to national security. Furthermore, it may not be productive to add another body of decision making into a small community which is already full of committees filled with the same group of people.

In fact, many villagers realize that the watershed forest ultimately belongs to the state and do not care about ownership or property regime. What the local people care about is rather the rights to use and manage the local watershed forest that their livelihoods depend on. Unfortunately, the villagers tend to exercise less restraint on the use of state property than private property and common property to a lesser extent. Except for the community watersheds, the forests are treated as open access - the state property is everybody's property.

Acceptance about the existence of operational rules governing the use of the watershed forest is important to cooperation in CBWM. In these communities, the operational rules of CBWM are perceived as the norms and values in daily life of the community. These rules are an intrinsic way of life of the local people. In small communities, the operational rules are common knowledge and everyone is aware of their function. The operational rules of CBWM are perceived by the villagers in the same way as the village laws used in solving other offenses. Some operational rules of CBWM have also been reinforced by belief and myth of the spirit of the headwaters.

Recognition of the operational rules may not mean that all the villagers acknowledge and accept the rules voluntarily, although most of them do. Some groups of people whose livelihoods are adversely affected by the rules of CBWM are certainly not pleased with them. These are mainly the landless farmers whose livelihoods depend largely upon the forest lands. This group of people are usually at the lower stratum of the village society and their voices are often ignored and outnumbered by the rice farmers or the water users. Another group is the people who have vested interests in trading forest products, such as timber. This group is small in number but usually powerful. To convince these people to comply with the rules is critical for the success of CBWM. They will consent to being deprived of certain resources of the watershed only if they can be convinced that what they do not appropriate from the watershed is really needed for its long-term sustenance, and that other fellow villagers will exercise similar restraint.

Despite the fact that the watershed forests are under the jurisdiction of the RFD, government officials have chosen to refrain from asserting authority over the community watershed forests. This is probably because most of the CBWM initiatives in the North have emphasized watershed protection rather than appropriation of resources. The purposes and activities of those local institutions are not in serious conflict with the *de jure* rights of the government. The government officials, the RFD in particular, have just become involved in CBWM recently, after the local institutions were established. In one case, the RFD even attempted to take over the community watershed forest by proposing to gazette the highly-publicized CBWM of Ban Thung Yao in Lamphun province to become a national park, but failed to convince the local people to allow it to do so. In the present situation, the best the government can do, or should have done a long time ago, is try to ally itself with these local institutions to push forward the watershed conservation policy - tasks that the government agencies themselves have failed to achieve on their own. However, policies and actions are a different story when dealing with the real issue of sharing and delegating the power over the resources. The government has only politically recognized and supported CBWM because the local institutions are congruent with the present government policies.

Many CBWMs in the North have gained publicity for their success in protecting watershed forests. They have received a variety of awards from government organizations, especially the RED and the conservation-oriented NGOs. They have drawn attention from public relation agencies and the media from both national and international networks. Any activity that jeopardizes these CBWM initiatives will certainly stir up public opposition. This can be considered an effective safeguard against the assertion of state property rights and change in government policy.

For institutional arrangements at higher level, Khambanonda (1971) concluded more than two decades ago that the failure in conservation and protection of forests and natural areas in Thailand could mainly be attributed to the lack of law enforcement and the defects of the policy, laws, and programs for conservation and protection of such resources themselves. A decade later, Kilakuldilok (1981) attributed the ineffectiveness of government efforts in solving the problems of watershed degradation to a familiar list of reasons, i.e., institutional weakness in all aspects of conservation, lack of political will, rapid population growth, and lack of a coherent long-term policy (cited in Blaikie, 1985: p.47). To date, though parts of these problems have been dealt with, the issues still exist.

Generally, researchers, such as Khambanonda (1971), Bhumibhamon (1986), and Tangtham (1992) feel that the available laws and regulations are sufficient for watershed management. The main problem is lack of enforcement. In many cases, enforcement has not been according to the purpose and principle of the law. Loopholes in the law are often manipulated to generate benefits to some parties at the expense of marginal resources and marginal people. Although watershed management in Thailand has developed considerably in recent years, there has been little institutional change, especially in terms of property regimes or authority system in the watershed. Most of the efforts invested to cope with the critical problems of watershed degradation were set in the old institutional framework designed to suit the situation three decades ago. Any initiative to change the institutional arrangements has been resisted by the status quo and impeded by the established structure of the bureaucratic polity. For instance, a current move to promulgate the Community Forest Act, although some progress has been made in the legislature, is still pending for review and little institutional change can be expected.

6. Collective Action in Resource Use

Theoretically, the pattern of behavior in Thai peasant society has been characterized by Embree (1950) as a loosely structured social system. However, Potter (1976) argues that the loose structure model was problematic from the beginning, in the selection of Bang Chan as the site of study. Bang Chan, located on the outskirts of Bangkok, is an unusual community which has no clearly defined boundaries, with a short history of settlement, and is ethnically diverse. Potter (1976) strongly opposes the "loosely structured model" of Thai peasant society by presenting evidence from study in the village of Chiang Mai⁵, Northern Thailand.

Chiang Mai village is a corporate group in that it has an independent social identity and owns common property, and its people have organized themselves to make decisions for the village community as a whole (Potter, 1976: p.35).

In Northern Thai society, there exists a pattern of reciprocal behavior and collective activities in the village community, along with the villagers' sense of affinity for their community (Moerman, 1968; Potter, 1976).

In a broad sense, Scott's (1976) moral economy approach is more appropriate to portray peasant collective behavior in the Upper North than Embree's loosely structured society model. One reason for this is that patron-client relationships (known as the *Pawliang-Luknong* system) or the entourage regulated by an ethic of reciprocity have prevailed in *Lanna* for a long time (Van Roy, 1971). Cooperative ethic is the basis for the organized social life of the community such as a cooperative labor exchange (Potter, 1976). Furthermore, rebellions of the collectively-organized peasants against infringement by the state have also occurred in this region.

The revolt of the farmer group against a logging concession in the watershed forest can be more or less explained by the tenet of the moral economy approach. However, the application of the moral economy model of peasant collective behavior in the present situation in the North must be more specific to the community setting, and other factors must be taken into consideration as well. The existence of cooperative activities and evidence of group formation in the North have to be set against a background of ecological differentiation, local processes of state formation in the pre-modern period, and considerable regional instability (Kemp, 1991). Buddhism may also influence the moral economic action in the distinctive Thai peasantry⁶ (Keyes, 1983b).

In the traditional cooperative activities, individual villagers had to depend on the willingness of another villager to volunteer in order to gain that individual's cooperation in such an activity. This was true not only for reciprocal activities based on dyadic relationships, but also for those collective activities organized at the village level. This happened when resources were abundant in comparison with the population. With such a circumstance, it was easier to secure enough cooperation through keeping good relationships with others, rather than by controlling the actions of others through a variety of rules.

In the past, it was labor not land that was scarce and was the most important resource which had to be secured from others through cooperative action. Cooperative labor exchange, which is known in Thai as *ao raeng*, *ao mu* or *au wan* (depending on the different dialects), was the practice through which individual households procured needed labor from the others. Cooperative labor exchange was helpful in rice farming, transplanting, harvesting, and threshing requiring large amounts of labor for a short period of time. This cooperative labor exchange is quite strict in maintaining equality in the amount of labor or duration contributed. This type of labor exchange is not at all like labor exchanged through market transactions. Since it is limited to people in households with whom a villager maintains good relationships it occurs only upon the willingness of a villager to help (Shigetomi, 1992).

The cooperative activities also extend to the major rituals in the life cycle of household members which require large amounts of money, and most households cannot cover all the costs on their own (Potter, 1976). Thus other households will contribute money, rice, and other necessities. These cooperative activities are organized on dyadic relationships. This relationship is fundamentally based on the willingness of people to volunteer their help. Nonetheless, people also feel a sense of obligation that they must express their sincerity to help to maintain the dyadic relationship with fellow villagers. Shigetomi (1992) calls this type of cooperation an "obligatory voluntaryism."

Shigetomi (1992: p.162) has defined a community in the North as "a territorial organization." In this sense, it is proper to comprehend the village as a social unit as well as a geographical unit. The early period of settlement in the North was mainly located in the forest where folklore held that the evil spirits lived. The first settlers usually clustered their residence together not only to protect themselves from wild animals but also to cooperate in protecting themselves from evil spirits (*Phi Pad*). A common scene found in the village communities of the North is the village shrine built for the guardian spirit known in the North as *Phi Sua Ban*, or *Phi Pu Taa* in the Northeast, to protect against evil spirits. It was believed that efforts by individual villagers or by each household were not enough to resist the *Phi Paa*. Once the territory protected by the village guardian spirit is blended with the village's collective obligations, the residents of that territory also come to recognize standards of behavior that have to be maintained so that no one in the village will act in a way that could anger the guardian spirit; for should it no longer protect the village, all the villagers would be in jeopardy. One villager's irreverent act is not just the problem of that individual; it is the communal problem of the whole village. Within this sphere of belief, the villages in the North can be recognized as territorial organizations in which the villagers have a

feeling of attachment and obligation to their own village (Potter, 1976). For the above reason, membership of the villagers has to be clearly defined to be able to identify who belongs to the village and who does not.

In the North, cooperative activities have been particularly important in managing the natural resources, especially water for agriculture. As mentioned earlier, the people of the North have traditionally established cooperative organizations of water users known as the *Muang Fai* system. Along with the water resource, in many communities, the forests at the headwaters of the streams have also been protected, or otherwise the uses of these watershed forests have usually been regulated as communal resources. It was this traditional cooperation, obligation, and attachment of the villagers to the definite territorial and social units that the community-based watershed managements initially emerged from in the North.

The management of local resources using a community watershed approach in the North is different from that of other regions. The village communities of Central Thailand are totally different for they are not clearly defined as territorial organizations as are those of the North, which are the "natural communities" (Keyes, 1970). In central Thai peasant community, the traditional sense of cohesion and obligation among the villagers is weak. Moreover, there are very few natural resources that belong to only one village to provide a sufficient basis for the communal ownership of such resources (Shigetomi, 1992).

Ideally, the common-property regime ensures sustainable use and conservation, equitable access to the resource, and livelihood security. In a local community which is dominated by reciprocity, the members of the community weigh their choice of resource use beyond their self-interest benefit in the short term, and consider long-term benefit for the whole community. In the same manner, the villagers assess their satisfaction on CBWM system based on the collective outcomes for the whole community, in addition to their individual gains. Under the governance of CBWM they may not get everything they want from the watershed but they are assured of obtaining the resource that they need most for their livelihood. Despite that they have to sacrifice their self-interest, most of the local people still choose to cooperate rather than defect or free ride.

In some communities, the villagers may have to employ maximum restraint in using their watershed resources. Nevertheless, in the last 25 years of CBWM inception, they have seen the replenishment of forest in the former shifting cultivation areas, and they still have the opportunity to appropriate some old growth forest. Moreover, the regular flow of water is even more rewarding for them. The interesting point here is the way the villagers evaluate their satisfaction on efficiency of resource use. These can be verified by the following propositions. First, according to Scott's (1976) moral economy approach, the peasant's satisfaction on the economic return is based on the "subsistence ethic". This means that even if the current benefits of the CBWM are not yet substantiated, they may still consider it efficient if they are assured of long-term security. Second, it is perhaps correct to conclude, according to Popkin (1981), that the villagers seek to achieve maximum livelihood security, not maximum profit, in their economic behavior. The villagers therefore tend to maintain reciprocal relationships with their fellows, and consider the satisfaction on economic returns of the resource use on the basis of sustainable livelihood rather than short-term benefit. This reflects the way the villagers think, which is called by Chambers (1988) as "sustainable livelihood thinking".

7. Livelihood Changes and Prospects for Community-Based Watershed Management

Thai society in general has changed rapidly in the past few decades. This pace of change, never before affecting rural life, is now penetrating into the lifestyle of the villagers in the rural community. The dynamics of rural Thai society are in one way or another summed up as a result of the incorporation of the local community into the wider social fabric. This process of incorporation has been driven by two main forces intertwined together (Hirsch, 1993). The first is the state-planned rural development programs such as improvement of major infrastructure, i.e., roads, electricity, irrigation, school, communications; and the expansion of state authority into the village polity. The second is the penetration of the market economy into the village economy. Today, there are virtually no communities in Thailand untouched by these two prime movers.

The patterns of changes can be articulated in several forms: change in production from subsistence to market orientation; change in consumption from meeting basic needs to accumulation of wealth and consumerism; change in occupation from the agricultural to non-agricultural sectors; change in control of resources from traditional community-based control to either state control or private ownership; change in pattern of behavior from reciprocity to competition; change from self-reliance to dependence on external inputs; and so on. These agrarian changes in peasant society have been the subject of debate known as "differentiation". In most cases, incorporation and differentiation usually go hand in hand (Hirsch, 1990b). These serial and simultaneous changes affect existing CBWM and the livelihood security of the rural communities overall.

Hirsch (1990b), beginning his scrutiny based on the arguments outlined by Scott and Popkin, has observed changes in traditional cooperation of peasants in the northwest of Central Thailand. Hirsch raises one element of cooperation, that is, reciprocal labour (*Ao Raeng*). He focuses his study on the decline of this traditional cooperative activity affected by the penetration of the state via the process of "rural development" (Hirsch, 1989). Changes in the village community induced disruptions in the rationale for traditional cooperation and the emergence of new forms of cooperation in response to change. Since cooperative practices require norms, mutual expectations, and even moral rules, they take time to become institutionalized. In the mean time, infringement of these traditional practices can quickly undermine established institutions (Hirsch, 1990b).

The expansion of the villages makes cooperation based on kinship or affinity difficult to establish on a village-wide basis. More fundamental changes, however, are driven by influences from external forces, in particular the state and market economy. Commoditization, debt, natural resource scarcity, and differentiation produce a change in production relations that makes traditional cooperation difficult to maintain by dyadic relationship. In particular, the decline of *Ao Raeng* can be attributed to these factors (Hirsch, 1990b). In response to changed conditions and outside influences, new forms of cooperation are emerging. Hirsch discusses the state-led rural development program, several forms of cooperative development, and an NGO program. These new forms all emphasize development through cooperation, however, from different perspectives. There has also been a sharp contradiction between an emphasis on individualism as the primary agent for community development and an appeal for cooperation in the specific programs.

Shigetomi (1992) has, on the other hand, observed the changing aspects of cooperation in Thai peasant society through the impacts of the market economy as it has penetrated into the village community. By the "impact of the market economy", he means essentially that "each farming household as an economic unit increases the degree of its dependence on buying and selling of commodities" (Shigetomi, 1992: p. 154). The changes that occur from this impact are commonly seen when the people discard their reciprocal behavior and take up interactions transacted only via the market.

With the rise of the market economy in rural areas, the village's natural resources become scarce because of overexploitation and commercialization. Competitive uses of local resources are intense while collective uses decline. Consequently, people no longer expect to receive from their fellow villagers the sorts of voluntary cooperation which they traditionally relied upon. In such an environment, cooperative activities formerly based on dyadic relationships have changed to those organized collectively by rules. In this new form of cooperation, the membership of the participants and beneficiaries is clear and well defined, and each member's actions are governed by regulations approved of collectively.

At the same time the impacts of the market economy have also changed the village community itself. Particularly, in Northern Thailand, Shigetomi (1992) states that the village has come to possess the natural resources needed for economic activities by claiming them as the CPRs. The village has spontaneously taken on the function of managing the newly-organized cooperative activities that use these communal resources such as watershed forests, headwater forests, sacred groves, and village woodlots. The new economic environment has brought about new forms of cooperation and organization bound together by principles which were different from those that underlay traditional cooperation.

As a result, the village community is being transformed into a "territorial organization" which has the responsibility to "maintain standards of behavior among all of the inhabitants within the territory in order to ensure their sustenance and economic productivity" (Shigetomi, 1992: p. 162). Thus changes in the village's functions arise from the need to control communal resources.

With the advent of the market economy in the village community, the natural resources surrounding the villages have become scarce through overexploitation, thereby reducing the chance of newly-established households to acquire new farmlands. At the same time, villagers have been forced to earn cash income as they become increasingly involved in market transactions. This new socio-economic environment has brought about new forms of cooperation held together by rules and principles that are different from those dyadic relationships that created the traditional cooperation. The new system of cooperative labor exchange, unlike the traditional system, is reached collectively by rules of conduct. It is not a dyadic interaction, but rather a clear and well-defined membership. The provision of labor no longer depends only on the willingness of people to voluntarily cooperate, but it is set according to rules agreed upon by the group.

The impact of the market economy has greatly changed the state of watershed resources. The expansion of upland cultivation for cash crops has destroyed the forests in the headwaters areas. Logging for timber trading in pursuit of private gain and economic surplus also accelerates the disappearance of the watershed forest. Upstream cultivation has caused soil erosion and sedimentation in water channels as well as chemical residuals (Roddan, 1993). These impacts have threatened the stability of lowland agriculture and the sustainable livelihood of the people (Faichampa, 1990).

The important stage of change is the institutionalization of the management process to assure a fair distribution of communal resources. Under new circumstances, the dyadic relationships of kinship and friendship must not distort the management process for distributing the shares and other benefits. The same rights and duties must be applicable to everyone which means that the community rules have to take priority over dyadic relationships and patron-client system (Shigetomi, 1992). In the market economy, such institutionalization of the resource management regime is necessary because the villagers have become more self-interested which makes it unacceptable to allow only a certain number of the villagers to benefit from the use of commons at the expense of the others.

Institutionalization of the village's communal resource management requires rules providing for the control of uses and the punishment of offenders. However, these local rules are not legalized

by national legislation or government authority, nor can the actions or behavior of the resource users be regulated through rules and contracts in every aspect. Therefore, in practice, the success of these new forms of cooperative activities and CBWM still relies largely on the traditional dyadic reciprocity and moral obligation of the villagers to cooperate together. Perhaps at this point, the critical issues are how to maintain the cooperation and reciprocity among the villagers; how to assure the members of the community that nobody will choose the free-rider strategy; and what kind of mechanisms are needed to make the local institutions effective in the future.

As the forest resources become more scarce the local communities are losing control of resources to the state in the form of national reserve forests, national parks, and other designations (Hirsch, 1990b). At the same time, the penetration of the market economy into the local community has decimated local control of resources in the form of commercialization of watershed resources and marginalization of local people. In the past, these communities were considered as the frontier and out of reach of state authority. The local communities had *de facto* autonomy to create their own rules to keep the members in peace and order. Minor conflicts were solved internally through negotiation, compromise, and graduated sanctions. The state rarely asserted its authority to interfere with the self-controlled management of local watershed resources as long as there was no threat to national security. The state, however, has now increased its presence in each locality in the form of rural development programs. The presence of the state apparatus does not necessarily interfere with the local institutions in every case. However, the state-planned development programs emphasizing popular participation implicitly aim to control the people rather than to devolve power from the government to the local people.

In fact, the villagers do not absolutely oppose the presence of the government officials in the community as long as they do not abuse their power. Instead these communities want the government to engage in a constructive role that can enhance the strength of local institutions. At present, the capability of local institutions to handle the increasing pressure from the external forces is being challenged considerably. The local institutions alone may not be able to overcome some of the conflicts in resource use. The state authority can help legitimize the local institutions in dealing with powerful threats from outside the community. This situation has opened up the feasibility of co-management strategies in watershed management which involve real power sharing between local communities and government agencies with jurisdiction over the resources, so that each can check and balance the potential excess of the other.

One of several factors that might have a profound effect on community-based watershed management is the increasing rate of land sales in many areas of Northern Thailand. This has resulted from the rapidly growing investment in the region causing the values of land to increase. At the same time, the growing middle-class population are increasing demands in the recreational and service sectors such as for resorts and golf courses. Lands in pristine and ecologically vulnerable areas may become valuable assets. Many villagers sell their lands when offered good prices. These newly-landless people, if absorbed into the non-agricultural sectors will do no harm to the watershed forests; however if this is not possible, some of them may further encroach on forest lands to replace the sold lands. This latter groups are a threat to the watershed forests and initiate a vicious circle of environmental degradation, poverty, migration, and further deforestation (Hirsch, 1990b).

8. Conclusion and Recommendation

This paper demonstrates that the use of watershed resources as a commons is not necessarily destined toward the scenario described by Hardin (1968) as the "tragedy of the commons". However, it does not completely reject the possibility of the tragedy of the commons, but disagrees with its generality and bimodal solutions - the state and the market. This paper indicates that there is another way to manage the common property resources, at the local community level. Local institutional arrangements have been effective in regulating the use of watershed resources and maintaining jointness as well as optimal rate of use. However, this propositions, like the "tragedy of the commons", cannot be used to generalize to all local communities but specify the likely situations and factors that enable villagers to develop successful community-based watershed management. Many local communities in the North have shown the potential to manage locally their own communal resources. Some communities have for generations managed their headwaters as a commons.

Theoretically, the presumption underlying the collective action of the resource users depends on several factors and circumstances. The moral economy approach (Scott, 1976) appears to be promising in the closed corporate village of pre-modern peasantry. The political economy approach (Popkin, 1979) seems to be more suited to the market economy where the peasant communities are incorporated into the larger political economic system in the modern period. The use of these two approaches needs to be stipulated clearly in terms of the local and historical background.

As suggested earlier, wherever possible, existing community-based watershed management should be given the chance to obtain legal status. The government should therefore legalize the right to manage the watersheds for these communities. Furthermore, as it was found that the local communities were not against the constructive involvement of the central government in community-based watershed management, this gesture opens up the feasibility for the state and the local communities to share power and co-manage the local watersheds. In this case, the government will act only as an advisor and provide technical assistance for the local communities. The RED will no longer be the sole custodian of watershed forests in the North. The state, however, should also be ready to be called upon as the last resort - the third-party negotiator, or the enforcer in some cases. The state may maintain its property rights in the watersheds but grant the rights to manage the local watersheds to the communities that depend upon the watershed forests.

It is also necessary that the delegation of power in the management of watersheds to the local community must be accompanied with decentralization of the political authority to local governance. Local organizations such as the Tambon Council and Village Committee must be empowered by the central government to be able to manage legally the local resources and enforce the operational rules. However, this is not an easy task. Institutional change in the higher level rules needs the political will to push it through the process of legislation. A long-delayed and struggling Community Forest Bill is a good example of this kind of change.

The National Forest Policy that favours large-scale commercial forestry should not be at the expense of local communities. This is especially important in the case of Northern Thailand where community-based watershed management has successfully prevailed for several decades. Such locally-managed watershed areas do not exist in other regions. This regional context indicates that neither the commercial forest nor community-based forest policies can be used as blanket prescriptions for all local communities in every region.

To achieve the goal of maintaining 40 percent of forest coverage area in Thailand and further economic development the Royal Thai Government needs policies for three major categories of forest: **first**, the protected and conservation forest including the national parks,

wildlife sanctuary, watershed class 1A, and national reserve forests; **second**, the large scale reforestation and commercial forest; and **third**, the community forest. The first category falls within the responsibility of the government agencies, primarily the RFD. The second category rests mainly on the private sector, with close consultation and monitoring by government agencies. The third policy can be implemented through the initiative of local communities with technical assistance from the RFD and NGOs. Community-based watershed management in the North fits into the third category. The implementation of these three policies must consider regional differences, socio-economic and cultural aspects of the localities, and the institutional framework. At present, the third policy has no legal foundation despite the fact that CBWM already exists. Thus, community-based watershed management should be given highest priority by the government as a most appropriate strategy of protecting the headwaters of the main river basins of Northern Thailand.

Notes

1. Stevenson (1991: p.40) identifies seven categories that constitute a set of necessary conditions for common property: (1) the resource unit has bounds that are well defined by physical, biological, and social parameters; (2) there is a well-delineated group of users, who are distinct from persons excluded from resource use; (3) multiple included users participate in resource extraction; (4) explicit or implicit well understood rules exist among users regarding their rights and their duties to one another about resource extraction; (5) users share joint, nonexclusive entitlement to the *in situ* or fugitive resource prior to its capture or use; (6) users compete for the resource, and thereby impose negative externalities on one another; and (7) a well-delineated group of rights holders exists, which may or may not coincide with the group of potential users.

2. Embree (1950) portrays Thai society from study of an atypical Thai community, Bang Chan, located on the outskirts of Bangkok. Bang Chan is not typical in terms of geographical, historical, political, and ethnical aspects.

3. More details in Tan-Kim-Yong (1983) and Surarerks (1986).

4. See more details in Van Der Meer (1981) about Conklin's (1957) classification of swidden systems which are divided into two major systems: (1) The partial systems with two subtypes -the supplementary swidden and incipient swidden farming; and (2) The integral systems with two subtypes - the pioneer swidden and established swidden farming. Meanwhile Kunstadter and Chapman (1978) classify upland cultivation into three types of swidden cultivation land use and one type of permanent upland cultivation: (1) short cultivation-short fallow (often used by Northern Thai); (2) short cultivation-long fallow, or "forest fallow" (often used by upland Karen and Lua); (3) long cultivation-very long fallow or abandonment (often used by Hmong and other opium growing hilltribes); and (4) permanent field tree crops, associated with use of forest for swidden rice and fuelwood.

5. Chiang Mai village is a pseudonym of a village community in Saraphi district, about one-hour drive from the city of Chiang Mai.

6. Keyes (1983b: p.865) states that "the Buddhist villagers in northeastern Thailand have a distinctive economic ethic and, thus, a distinctive moral economy not because they are peasants, but because they are Buddhists who are also peasants." In Northern Thailand, Buddhist monks have historically been involved as a spiritual leader of the community toward infringement from external forces such as the case of Kruba Srivichai, the highly-respected monk of Lanna during the early period of incorporation into the Siamese State (Vaddhanaphuti, 1984). Currently, there have been increasing incidents of Buddhist monks leading the local communities to save watershed forests from logging and shifting cultivation.

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